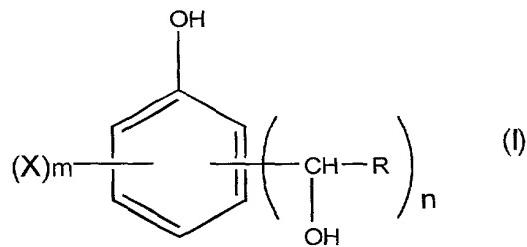


## CLAIMS:

## 1. New phenolic compounds derived from dialkoxyethanals of formula

(I)

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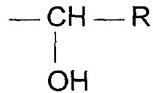


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in which

- R is a dialkoxymethyl group with from 3 to 17 carbon atoms, a 1,3-dioxolan-2-yl group optionally substituted on peaks 4 and/or 5 by one or more alkyl groups comprising from 1 to 8 carbon atoms or a 1,3-dioxan-2-yl group optionally substituted on peaks 4 and/or 5 and/or 6 by one or more alkyl groups comprising from 1 to 8 carbon atoms,
- n has the value 1, 2 or 3 and the group or groups

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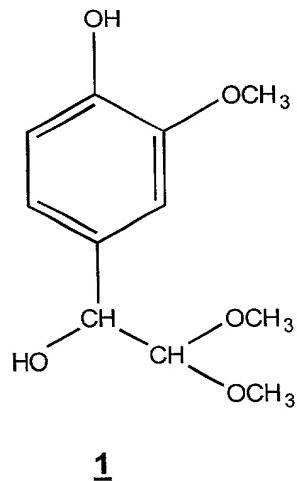
are in ortho and/or in para position of the OH group of the cycle

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- m represents from 0 to 4-n and X represents a functional group such as hydroxyl or halogen such as chlorine, fluorine, bromine, iodine or an alkyl or alkoxy group comprising from 1 to 8 carbon atoms or aryl group comprising from 5 to 12 carbon atoms and optionally 1 or 2 heteroatoms such as nitrogen or oxygen or carboxy or  $\text{--CO-Y}$  group in which Y represents an alkyl or alkoxy radical containing from 1 to 8 carbon atoms or amido or amino or thiol radical, on condition that at least one of the ortho or

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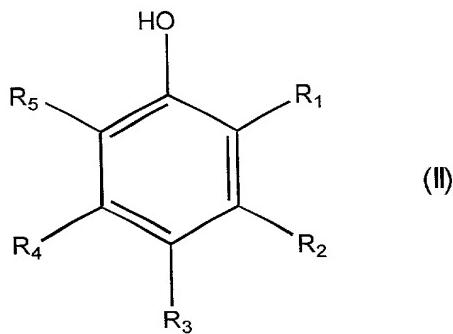
para positions of the phenolic cycle is substituted by a hydrogen, with the exception of the compound 1



and their salts with the alkali metals, alkaline-earth metals and amines.

15        2. Preparation process for phenolic compounds of formula (I) and their salts with the alkali metals, alkaline-earth metals and amines characterized by the fact that:

- a phenol of formula (II)

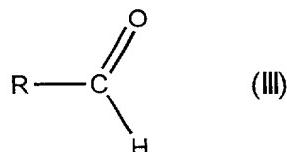


in which R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub> can be a hydroxyl radical, a halogen such as chlorine, fluorine, bromine, iodine or an alkyl radical comprising from 1 to 8 carbon atoms or an aryl radical or an alkoxy radical comprising from 1 to 8 carbon atoms or an ester radical comprising from 1 to 8 carbon atoms or an

amide radical or an amine radical or a thiol radical, on condition that at least one of the ortho or para positions of the phenolic cycle is substituted by a hydrogen

- is reacted with an aldehyde of formula (III)

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in which R is a dialkoxymethyl group, a 1,3-dioxolan-2-yl group optionally substituted on peaks 4 and/or 5 by one or more alkyl groups or a 1,3-dioxan-2-yl group optionally substituted on peaks 4 and/or 5 and/or 6 by one or more alkyl groups

- in the presence of a base.

3. Process according to claim 2, characterized by the fact that 1 mole of phenol of formula II is reacted with 0.1 to 10 moles of aldehyde of formula III in the presence of 0.1 to 2 moles of base.

4. Process according to claim 3, characterized by the fact that 1 mole of phenol of formula II is reacted with 0.1 to 5 moles of aldehyde of formula III in the presence of 0.1 to 1 mole of base.

5. Process according to claim 2, characterized in that the base is constituted by tertiary amines.

6. Process according to claim 5, characterized in that the base is constituted by tributylamine or triethylamine.

25 7. Process according to claim 2, characterized in that the base is a hydroxide of alkali metal.

8. Process according to claim 7, characterized in that the base is constituted by sodium hydroxide or potassium hydroxide.

30 9. Process according to claim 2, characterized in that the base is a carbonate of alkali metal.

10. Process according to claim 9, characterized in that the base is sodium carbonate or potassium carbonate.

11. Process according to claim 2, characterized in that the product of formula III is dimethoxyacetaldehyde, diethoxyacetaldehyde, dibutoxyacetaldehyde, 2-formyl-1,3-dioxolane or 5,5-dimethyl 2-formyl 1,3-dioxane.

12. Use of the phenolic compounds of formula (I) and their salts with the alkali metals, alkaline-earth metals and amines, according to claim 1, as synthesis intermediate.

13. Use of the phenolic compounds of formula (I) and their salts with the alkali metals, alkaline-earth metals and amines, according to claim 1, as intermediate for the preparation of phenolic resins without formaldehyde.

14. Use of the phenolic compounds of formula (I) and their salts with the alkali metals, alkaline-earth metals and amines, according to claim 1, as crosslinker without formaldehyde.

15. Use of the phenolic compounds of formula (I) and their salts with the alkali metals, alkaline-earth metals and amines, according to claim 1, as crosslinker with a cellulose substrate, a non-woven substrate, of nylon, of polyester, of glass.

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